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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,222	08/20/2001	Thomas Engel	GK-ZEI-3126/	6741

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EXAMINER

NGUYEN, THONG Q

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 12/27/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/856,222

Applicant(s)

ENGEL ET AL.

Examiner

Thong Q. Nguyen

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. The present Office action is made in response to the Pre-Amendment (Paper No. 4) filed by applicant on 08/20/2001.

It is noted that in the Pre-Amendment, applicant has filed a substitute specification and a marked-up copy showing the changes to the specification. A review of the newly-filed substitute specification has resulted that the substitute specification is accepted and thus has been entered into the present application.

It is also noted that in the Pre-Amendment, applicant cancelled claims 1-5 and added new claims 6-13. Thus, the newly-added claims 6-13 are examined in this Office action.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. This application has been filed with drawings containing two sheets of figures 1-2b. The drawings have been received by the Office on 08/20/2001.
4. The drawings are objected to because the use of the Germany language in the drawings. In particular, each terms "ERSATZBLATT (REGEL 26)" (figure 1) and "ERSATZBLATT (REGEL 25)" (figure 2) is shown in a Germany language. A proposed drawing correction or corrected drawings are required in reply to the Office action to

Art Unit: 2872

avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: In particular, each of the following references "PCI", "MSM", "VIS", "X", "Y", "Z", "MCU", "COM", "PC" and "LPT" shown in figure 1, and the reference "L" as shown in each of figures 2a and 2b are not mentioned in the specification. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

7. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: First, the recitation concerning the arrangement of the two diffusion disks indirectly behind each other in the illumination ray path as can be seen in claim 7 is not mentioned in the specification; Second, the recitation concerning the length of a structure in relation to the rotation speed as can be seen in claim 9 is not mentioned in the specification; Third, the recitation concerning the comparison between

Art Unit: 2872

the wavelength of the illumination laser and that of the wavelength in manufacture semiconductors as can be seen in claim 10 is not mentioned in the specification; and Fourth, the recitation concerning the number of the illumination wavelength as can be seen in claim 11 is not mentioned in the specification.

8. The disclosure is objected to because of the following informalities: Page 2: lines 10 and 13, the specification has used different terms for the reference "UP".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 6-11 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claim 6 is rejected under 35 USC 112, second paragraph for the following reasons: First, the claim is unclear for the recitation of a microscope and the pulsed laser in the preamble of the claim. The inventive device as clearly described in the specification and shown in figure 1 discloses an inspection system having an illumination system in the form of a laser module (LM), a microscope (MI) and a coupling system (UP) having mirrors and rotatable diffuser disks (see figures 2) for coupling pulsed laser from the laser module into the microscope. As such, it is unclear why applicant claims a microscope (preamble part of the claim) comprises a pulsed laser and rotating diffuser disks

Art Unit: 2872

(features appeared after the term "comprising"); and Second, the claim is indefinite by the recitation thereof "especially for... manufacture" (lines 1-2). The mentioned recitation contains a linking term thereof "especially" which linking term link board and narrow ranges or limitations.

b) Claim 7 is indefinite because the feature "the illumination ray path" (lines 2-3) lacks a proper antecedent basis.

c) Claim 9 is indefinite by the recitation thereof "a rotation speed... laser pulses" (lines 1-4). What does applicant mean by the mentioned recitation? Further, the use of terms "such a" (line 2) and "and/or" (line 2) render the claim indefinite because it is unclear about the boundary of the feature(s) claimed.

d) Claim 10 is indefinite because the feature "the illumination... semiconductors" (lines 2-3) lacks a proper antecedent basis.

e) Claim 13 is indefinite because the feature "said laser" (line 2) lacks a proper antecedent basis.

f) The remaining claims are dependent upon the rejected base claim and thus inherit the deficiencies thereof.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application

Art Unit: 2872

by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

12. Claims 6, 8-9 and 13, as best as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Kudanov et al, INSPEC Abstract of "Pribory... Eksperimenta", submitted by applicant.

Kudanov et al disclose a rotatable diffusing system comprises a cover glass that has been mechanically dulled on both sides. The diffusing system is disposed after a laser for eliminating the spurious interference patterns caused by the coherence of the laser radiation.

13. Claims 6, 8, and 13, as best as understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Oohashi et al (U.S. Patent No. 6,078,393).

Oohashi et al disclose an inspecting system having a laser module for providing a pulsed laser ray which is guided to a diffusing element rotatable about the illuminating light path for the purpose of eliminating speckle problems, and a sensor which can be a UV camera for detecting light from the objected to be illuminated.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Washizuka (U.S. Patent No. 5,541,416) in view of Biegen (U.S. Patent No. 4,869,593).

Washizuka discloses an inspecting system. The system as described at columns 4-5 and shown in figures 1-2 comprises a laser module with pulsed UV laser (5), an optical system (4) for receiving the pulsed laser beam and then guiding such beam onto a semiconductor (100) disposed on a scanning table (1-3); a Photodetector system (6) for detecting light reflected from the semiconductor, and a display system having a control system for controlling the operation of the inspecting device. It is noted that Washizuka does not suggest the use of a rotatable diffusing system after the laser module for the purpose of providing a homogenization of the illumination. However, the use of a rotatable diffusing system after a laser module for such a purpose is well known to one skilled in the art as can be seen in the optical device provided by Biegen. In particular, Biegen discloses an inspecting system having a laser module (10), a rotating diffusing system (18, 20) disposed after the laser module for providing a homogenization of the illumination, an optical system for receiving the laser and for guiding laser beam to a test surface (48), an imaging system (56, 58) for receiving light from

Art Unit: 2872

the test surface and then transmitting such light to a display system having a monitor (72), and a controlling system for controlling the operation of the inspecting system. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the inspecting system provided by Washizuka by installing a rotatable diffusing system after the laser module as suggested by Biegen for the purpose of providing a homogenization of the illumination.

Allowable Subject Matter

16. Claim 7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

17. The following is an examiner's statement of reasons for allowance:

The device as claimed in claim 7/6 is patentable with respect to the cited art by the limitations concerning the use of two diffusing members which are rotated in opposite directions wherein the set of diffusing elements is installed in a microscope having a pulsed laser module for the purpose of homogenization of the illumination. It is noted that the use of a set of diffusing elements after a laser module or a light source is known to one skilled in the art as can be seen in each of the U.S. Patent Nos. 6,061,133 and 5,796,459; however, each of the mentioned Patents does not teach the rotation of the two diffusing elements in opposite directions.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

Art Unit: 2872

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

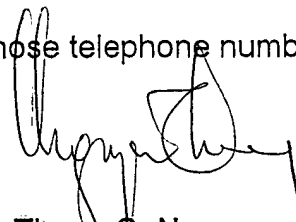
Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional references are cited as of interest in that each discloses the use of a rotatable diffusing element after a laser for providing a homogenization of the illumination.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Nguyen whose telephone number is 703 308 4814. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703 308 1687. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308 7724 for regular communications and 703 308 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.



Thong Q. Nguyen
Primary Examiner
Art Unit 2872

December 20, 2001